

**Improving Readiness with a Public-Private Partnership:
NAVAIR's Auxiliary Power Unit Total Logistics Support Program**

by

William Lucyshyn, Rene Rendon, and Stephanie Novello



**CENTER FOR PUBLIC POLICY
AND PRIVATE ENTERPRISE**
SCHOOL OF PUBLIC POLICY

This research was partially sponsored by a grant from
The Naval Postgraduate School

July 2005

Report Documentation Page			Form Approved OMB No. 0704-0188	
<p>Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</p>				
1. REPORT DATE JUL 2005	2. REPORT TYPE	3. DATES COVERED 00-00-2005 to 00-00-2005		
4. TITLE AND SUBTITLE Improving Readiness with a Public-Private Partnership: NAVAIR's Auxiliary Power Unit Total Logistics Support Program			5a. CONTRACT NUMBER	
			5b. GRANT NUMBER	
			5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)			5d. PROJECT NUMBER	
			5e. TASK NUMBER	
			5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) University of Maryland,School of Public Policy,Center for Public Policy and Private Enterprise,College Park,MD,20742			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)			10. SPONSOR/MONITOR'S ACRONYM(S)	
			11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited				
13. SUPPLEMENTARY NOTES				
14. ABSTRACT see report				
15. SUBJECT TERMS				
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 31
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified		

Improving Readiness with a Public-Private Partnership:

NAVAIR's Auxiliary Power Unit Total Logistics Support Program

by

William Lucyshyn, Rene Rendon, and Stephanie Novelloⁱ

Part I

The morning of April 15th, 1998, found Debra Bautista struggling with a daunting assignment. As the Program Manager for the F/A-18 fighter Auxiliary Power Unit at the Naval Aviation Depot, Cherry Point (NADEP-CP), she was charged with developing and implementing a partnership between NADEP-CP and private industry to help reduce the cost of managing and distributing repairable F/A-18 auxiliary power units (APUs) and to increase system reliability, maintainability, and related spare parts availability. The APU performs the critical function of generating power to start the aircraft's engines and provide electrical power on the ground. In fact, the day before, Honeywell, Inc. had visited the Cherry Point depot to discuss such a partnering arrangement for APU repair. This would be the Navy's first public-private venture; thus the task facing Bautista was a considerable one.

ⁱ This case was a joint effort of the University of Maryland's Center for Public Policy and Private Enterprise (at the School of Public Policy) and the Naval Postgraduate School's Graduate School of Business and Public Policy. William Lucyshyn is Senior Research Scholar at the Center for Public Policy and Private Enterprise, Rene Rendon is a Lecturer at the Graduate School of Business and Public Policy (Naval Postgraduate School), and Stephanie Novello was Graduate Research Assistant at the Center for Public Policy and Private Enterprise. This case was written under the supervision of Professor Jacques S. Gansler at the University of Maryland and was supported by RADM James B. Greene, USN (Ret) Acquisition Chair at the Graduate School of Business and Public Policy (Naval Postgraduate School).

INTRODUCTION

The APU public-private partnership was originally conceived of as a commercial outsourcing initiative during a Navy acquisition conference in Arizona in early 1996. At the depot level, as well, staff knew that a reengineering of logistics support processes, to reflect a more performance-based approach, was needed in order to reduce the cost of managing and distributing repairable APUs and to increase system reliability.

A further incentive pushing NADEP-CP towards embracing a more performance-based approach in partnership with the private sector came from the Defense Reform Initiative (DRI). In the DRI, Secretary of Defense William Cohen defined four major areas for applying reforms, including reengineering, consolidating, competing, and eliminating. Bautista and her staff believed that the DRI could be applied to the F/A-18 APU depot maintenance program, specifically in the form of a partnership between the government and private industry.

The real impetus behind the partnership, however, came in January 1998, when, due to new legislation to introduce competition into depot maintenance, Naval Air Systems Command (NAVAIR) met with Honeywell to discuss partnering with a public depot. The new legislation, section 2469 of U.S. Code Title 10, requires that a public-private competition be held before any depot-level workload is moved from the public sector to the private sector. The new requirements of Title 10, coupled with Bautista's belief that a public-private partnership would be the key to reducing F/A-18 APU costs while increasing reliability and availability, made NADEP-CP a prime candidate for being the first Naval Aviation Depot to implement a public-private partnership.

BACKGROUND

Naval Aviation Depots¹

Naval Aviation Depots, such as the one located at Cherry Point, North Carolina, are responsible for the repair, rebuilding, and overhauling of aircraft weapons systems. They seek to serve the fleet by improving Fully Mission Capable (FMC) rates through increased aircraft operational availability. The depots try to reduce the length of the maintenance operation (measured by aircraft maintenance downtime), while increasing the reliability of the maintenance operation (measured by aircraft operational uptime). Thus, depots must balance the competing requirements of highly reliable repairs with low cycle times (the length of time from aircraft induction into the maintenance system until service is completed and the aircraft is ready for return to the fleet)—and do this at minimum costs.

In 1993, the Navy operated a total of six aviation depots. Partly as a result of the end of the Cold War, the Navy found it had too much capacity in its depots and aggressively implemented BRAC (Base Realignment and Closure) in the mid-1990s. Thus, by 1995, the number of aviation depots had been reduced to three: Cherry Point, North Carolina; North Island, California; and Jacksonville, Florida.

Historically, depot maintenance work was performed at government-owned depot facilities by government employees, both civilian and military. More recently, the Navy had begun to use contractors to perform depot maintenance work, but with a clear preference to sole source contractors. In 1996, naval depots awarded 151 competitive bid

maintenance contracts worth \$153 million and 12,622 sole source contracts worth \$638 million.

Public-Private Partnerships²

For years, the question of who should perform depot maintenance and where it should be performed was the subject of much debate. Fundamental to the debate was the conflict between Department of Defense (DOD) attempts to depend more on the private sector for depot maintenance and congressionally-mandated provisions of Title 10 (10 USC 2469), which:

- 1) limit private-sector workloads to 50 percent of available funding in a fiscal year;
- 2) oblige the government to maintain certain core capabilities in military depots;
- 3) and require public-private competitions for certain workloads rather than simply outsourcing this work to the private sector.

Yet, public-private partnerships can serve as a way to resolve the conflict between the public-sector workforce (with their union and congressional backing) arguing for sole-source awards to the government depots and the empirical evidence that says that competition and/or other forms of incentives will improve performance and lower costs—no matter whether the winner is the public or private sector. Partnerships between the public and private sectors take advantage of the best of both worlds, maintaining public-sector workforces while improving performance and efficiency.

In a nutshell, public-private partnerships are “arrangements through which the combined resources, risks, and rewards of a public agency and a private company are intended to provide greater efficiency, better access to capital, and improved compliance

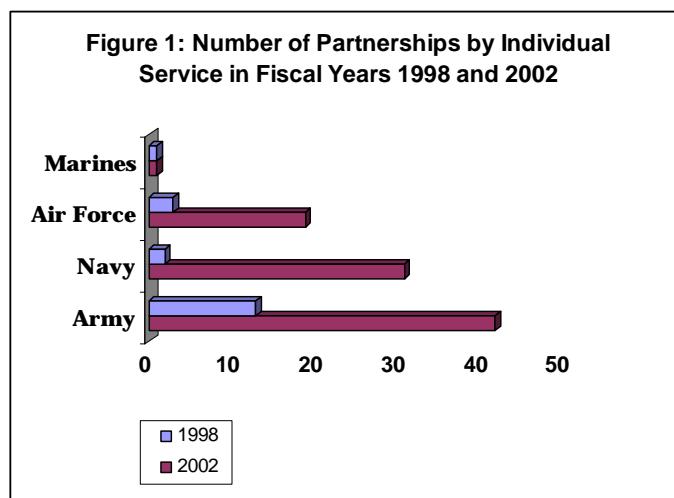
with a range of government regulations.”³ Regarding depot maintenance, partnerships with the private sector are used to merge best commercial practices and processes with DOD’s vast maintenance capabilities in an effort to enhance the efficiency and viability of DOD’s depots. In the past, DOD has made arrangements with the private sector for depot maintenance, such as work-share agreements and facility-use partnerships, but these arrangements generally were not labeled as “public-private partnerships.” Forming partnerships with the private sector to help support core depot maintenance capabilities, better utilize public facilities, and leverage private-sector investment in military facilities is a relatively new idea.

According to DOD policy, public-private partnerships can take a number of forms, including:

- Use of public-sector facilities, equipment, and employees to perform work or produce goods for the private sector;
- Private-sector use of public-sector equipment and facilities to perform work for the public sector; and
- Work-share agreements, using both public- and private-sector facilities and/or employees. (See Exhibit 3 for a more detailed description of various partnering approaches.)

DOD’s first public-private partnership was formed in 1994 by the Army. Since then, the number has steadily increased, with a total of 93 such partnerships in fiscal year 2002 across the Army, Air Force, Navy, and Marine Corps. Between fiscal years 1998 and 2002, the number of public-private partnerships across all services increased four-fold (see Figure 1). In fiscal year 2002, maintenance performed under depot partnerships

comprised \$435 million, or 2.2 percent, of the \$19.4 billion that DOD spent in total on depot maintenance that year. Importantly, according to the Government Accountability Office (GAO), a number of public-private partnerships show either promising results or good potential for improving depot maintenance operations. Specifically, the GAO reviewed some 90 depot partnerships and found that 28 had led to or had the potential to lead to greater depot efficiency and viability, as measured in reduced repair times, improved business processes, and lower depot support costs.



Source: GAO-03-423

NADEP-CP

NADEP-CP is located at the Cherry Point Marine Corps Air Station, some 90 miles southwest of Cape Hatteras, North Carolina. Its mission is “to support NAVAIR in providing the warfighter with Absolute Combat Power through technologies that deliver dominant combat effects and matchless capabilities.”⁴ In addition, NADEP-CP provides maintenance, engineering, and logistics support for a wide variety of aircraft, including the Av-8B Harrier, the medium-lift transport H-46 Sea Knight helicopter, the H-53D Sea

Stallion and H-53E Super Stallion helicopters, and the AF MH-53J helicopter. The Depot's work also includes maintenance and engineering support for the auxiliary power units for the F/A-18, C-2, S-3, P-3, and C-130 aircraft.

Auxiliary Power Units

An APU is a relatively small, self-contained generator used in aircraft to start the engines, usually with compressed air, and to provide electrical power while the aircraft is on the ground. In many aircraft, the APU can also provide electrical power in the air. While the original APUs are manufactured by Honeywell Inc., NADEP-CP traditionally performed all of the engineering and configuration management of the APUs, as well as the repair and overhaul effort, data management, inventory management, and parts delivery. In addition, the Defense Logistics Agency was responsible for procuring and managing more than 90 percent of the consumable items NADEP-CP used to repair the APUs.⁵ More specifically, the APU logistics system historically worked as follows.

Honeywell manufactured the original APUs on a NAVAIR production contract. The new APUs were then deployed to the field through the normal naval supply system, and returned to NADEP-CP when they were in need of depot-level repair. Such maintenance could involve repair, overhaul, or replacement of APU components and parts, with the DLA supplying NADEP-CP with the consumable items needed for repair work. Once an APU had been repaired to operational condition, it was returned to the field for operational use. It should be noted that Cherry Point's core competency traditionally centered on the repair and overhaul portion of the logistics support, while Honeywell, with its specialized knowledge, focused on design, production, and parts supply.



Figure 2. Employee performs repairs on an APU

THE CASE FOR CHANGE

F/A-18 APU reliability, maintainability, and availability had always been a problem for NADEP-CP. Bautista and her team were constantly challenged with providing a steady stream of overhauled APUs to the fleet commanders due to an increasing inventory of aging APU components, poor spare parts support, and rapidly decreasing mean flight hours between unscheduled APU removals (MFHBUR).ⁱⁱ

ⁱⁱ The Navy uses MFHBUR as a metric of APU reliability and calculates it by dividing the total flight hours for each aircraft platform by the number of unscheduled APU removals at the organizational level.

In the late 1990s, the Depot was experiencing an increasing backlog of APUs in need of repair, with a total of 123 APUs on back order and availability in the range of only about 65 percent. In addition, customer wait-time was reaching as high as 35 days and the Depot was averaging on-time delivery only about 20 percent of the time. Moreover, the costs for maintenance and support of the F/A-18 APUs had been increasing steadily over the past several years. Although complete historical costs were not known,ⁱⁱⁱ Bautista knew that these costs had been going up because of the rapidly declining mean flight hours between unscheduled APU removals, and the extra efforts (and overtime) required to keep up.

THE CHALLENGE

As Program Manager, Bautista was given the daunting challenge of figuring out how to increase F/A-18 APU reliability, maintainability, and related spare parts availability, while simultaneously reducing the cost of managing and distributing repairable APUs. To address this task, Bautista assembled a team to conduct some preliminary research on the adoption of innovative business practices used in the private sector.

In their research, Bautista and her team came across the November 1997 Defense Reform Initiative (DRI), which they felt emphasized and supported the need for change at NADEP-CP. Through the DRI, Secretary of Defense William Cohen established

ⁱⁱⁱ The lack of accurate documentation of actual repair costs does not indicate poor record keeping on the part of NADEP-CP. It is typical of maintenance action done by government facilities not to document true historical costs on individual items. Rather, the overall costs are simply pooled.

principles for reform and defined four major areas in which to apply these principles.

The principles included “focus on core competencies” and “streamline organizations for agility.” The major focus areas for applying these principles consisted of:

- Reengineering—adopting modern business practices to achieve world-class standards of performance;
- Consolidating—streamlining organizations to remove redundancy and maximizing synergy;
- Competing—applying market mechanisms to improve quality, reduce costs, and respond to customer needs; and
- Eliminating—reducing excess support structures to free resources and focus on core competencies.⁶

Bautista knew that Secretary Cohen’s Defense Reform Initiative could be applied to the F/A-18 APU depot maintenance program. In fact, depot maintenance is specifically identified in the DRI as an area that could potentially benefit from increased interaction and competition with the private sector:

DOD depots are currently performing maintenance on planes, vehicles, and other weapons systems—much of which our military leadership believes could also be reliably performed in the private sector. For this work, as for the commercial activities described above, competition between public teams and private firms will sharpen the performance and lead to better value for the Department.

*Secretary of Defense William Cohen
November 1997⁷*

What Bautista had in mind, however, was not necessarily *competition* with the private sector. She was thinking that the DRI could encompass the development of depot

maintenance *partnerships* between the government and private industry. In her mind, the primary intent of such a depot maintenance partnership would be to enhance depot support for the war fighter, while recognizing the legitimate national security need for the Department of Defense to retain depot maintenance capability. Thus, Bautista envisioned a partnership in which NADEP-CP focused on its core competency of the repair and overhaul of F/A-18 APUs, while teaming up with a private-sector company, such as Honeywell, on the other portions of logistics support, such as design, production, and parts supply.

Such a partnership would involve a direct vendor delivery (DVD)/total logistics support (TLS) arrangement. The main objective of such an arrangement would be to reduce costs by increasing systems' reliability, maintainability, and related spare parts availability as a result of shifting responsibility for these from the government to the private sector—and creating appropriate incentives for the private sector to achieve these results. This shift of total logistics support, in turn, would be designed with the intent of reducing the manpower, infrastructure, facilities, tooling, and inventory that the government would have to maintain to support the equipment.⁸ Bautista believed that initiating such a partnering arrangement with industry would be the solution to improving the efficiencies of F/A-18 APU logistics support. Moreover, Bautista knew that the partnership would not have to be limited to just the F/A-18 APUs; the partnership could be expanded to improve logistics support for C-2, S-3, P-3, and C-130 APUs as well.

THE ACTION PLAN

Bautista knew that implementing such an unprecedented public-private venture would not be easy. Not only would she have to chart new territory, but she would have to overcome significant resistance—from NAVAIR, depot work force, the unions, and members of the Congressional caucus^{iv}—in order to put her partnership into action. She was unfazed, however, and got to work right away.

Business Case Analysis⁹

Bautista knew that the first task would be to make the business case for a public-private partnership. The Naval Inventory Control Point, Philadelphia (NAVICP, responsible for procuring and managing maintenance and logistical support of repairable aviation parts, including APUs), got involved at this point and requested that the Navy Price Fighters prepare a business case analysis (BCA). The Navy Price Fighters then contracted out the BCA effort to a private contractor.

The objective of the BCA was to determine whether it was economically feasible to enter into a multiple year direct vendor delivery /total logistics support (DVD/TLS) contract with Honeywell—the goal being break-even costs or better with other benefits. The analysis compared the Navy cost of ownership without the DVD contract to a proposal from Honeywell that also improved reliability and availability. The theory was that NAVICP would award Honeywell, as the prime contractor, a firm-fixed price contract per flight hour by aircraft platform. Honeywell would, in turn, subcontract the repair work to NADEP-CP under a cost-reimbursement contract.

^{iv} This is the largest Congressional caucus on Capital Hill, with 135 members.

In conducting the BCA, the contractor performing the analysis used one year of data—FY 1998 demands and FY 1999 repair prices. It summarized costs associated with the Navy Working Capital Fund into two major categories, material and operations costs. Material costs—the cost of goods sold—included fully burdened repair costs and material maintenance costs such as depot washout, carcass loss, and obsolescence. Operations costs included NAVICP-related costs, storage, and transportation. The approved BCA of September 1999 concluded that the Navy would save \$13.98 million over ten years by awarding the DVD/TLS contract to Honeywell (see Table 1). During detailed discussions after the BCA report was issued, NAVICP identified other quantitative benefits of the DVD/TLS contract totaling \$34.8 million.

Table 1. BCA Cost Comparison of DVD and Non-DVD Alternatives	
<u>Without DVD</u>	<u>Amount</u>
Material costs	\$196,156,100
Operation costs	34,017,000
Total	\$230,173,100
<u>With DVD</u>	<u>Amount</u>
Material costs	\$189,084,100
Operation costs	\$27,105,800
Total	\$216,189,900
With DVD Cost Savings	\$13,983,200

Source: DOD IG Report D-2000-180

Statutory Authority

Armed with the BCA data showing a cost savings of \$13.98 million over a ten-year contract period, and very significant performance improvements to be expected, Bautista continued to pursue the goal of making the public-private partnership a reality. Her next task would be to identify the statutes governing defense depot maintenance in order to make the case that the appropriate authority existed to establish a public-private partnership (see Exhibit 1). Her team assembled the relevant statutes and skillfully demonstrated that there was statutory authority that specifically authorized the creation of a public-private partnership similar to the one Bautista envisioned (see Exhibit 2).

Partnering Approaches

Subsequently, Bautista and her team identified various partnering approaches applicable to the Cherry Point APU program (see Exhibit 3) and identified some common characteristics that would contribute to a partnership's success in achieving DOD's objective of improved depot efficiency and viability (see Exhibit 4). In addition, they investigated the opportunities available in the new logistics initiatives supported by the USD (AT&L), specifically in the area of partnering with industry. (See Exhibit 5 for a chronology of the Honeywell/NADEP-CP partnering.)

PART I CASE QUESTIONS/EXERCISES

1. Based on the data provided in this case, what functions are included in the scope of the maintenance and logistics support for the Total Logistics Support (TLS) program at NADEP-CP?
2. Develop a concise statement describing the Program Manager's problem.
3. Identify the various stakeholders of the TLS APU maintenance and logistics support program.
4. Taking into account NADEP-CP and Honeywell's core competencies, identify various options that the Program Manager has for partnering with industry for some or all of the TLS APU maintenance and logistics support program.
5. What may be some of the Program Manager's concerns regarding the partnering with industry for some or all of the TLS APU maintenance and logistics support program?
6. What legislation would be applicable to partnering with industry on the TLS APU maintenance and logistics support program?
7. Based on your analysis of the statutory authorizations listed in Exhibits 1 and 2, what limitations and opportunities do you see relating to the partnering with industry for some or all of the TLS APU maintenance and logistics support program?
8. Based on your analysis of the statutory authorizations and the different types of partnering arrangements listed in Exhibit 3, develop three different strategies for partnering with industry for the F/A-18 APU maintenance and logistics support program. In developing your strategies, be sure to address the following factors:
 - a. acquisition strategy
 - b. contract type
 - c. contract incentives
 - d. period of performance
 - e. Federal Acquisition Regulations
 - f. public sector incentives
10. Based on the uncertainty associated with this innovative approach, the results of the business case analysis, and the characteristics of success in Exhibit 4, what approach would you recommend?

EXHIBIT 1

STATUTORY AUTHORITY GOVERNING DOD DEPOT

MAINTENANCE

10 USC 2464: DOD must maintain a core logistics capability that is government-owned and government-operated (including government personnel and government-owned and operated equipment and facilities).

10 USC 2466: Allows no more than 50 percent of the funds made available in a given fiscal year to a military department for depot-level maintenance and repair workload to be used to contract for performance by non-federal government personnel.

10 USC 2469: Requires a public-private competition to move depot-level workload from an organic depot (over \$3 million annually) to the private sector.

EXHIBIT 2

STATUTORY AUTHORITY SUPPORTING PUBLIC- PRIVATE PARTNERSHIPS

10 USC 2208: Permits depots to sell articles or services outside DOD if purchaser is fulfilling a DOD contract and the contract is awarded pursuant to a public-private competition.

10 USC 2553: Permits the Secretary of Defense to designate DOD industrial facilities, other than Army facilities governed by section 4543, to sell articles or services outside DOD under conditions similar to those in section 4543. Proceeds are to be credited to the funds incurring the costs of the manufacture or performance.

10 USC 2667: Allows the leasing of non-excess equipment and facilities of a DOD activity to a person outside DOD. The leasing Military Department may use the proceeds.

10 USC 4543: Authorizes Army industrial facilities to sell articles or services outside DOD for specialized purposes and under certain conditions, including that the goods or services not be commercially available in the United States and the sale will not interfere with the facility's military mission. The proceeds are to be credited to the funds incurring the costs of manufacture or performance.

1995 National Defense Authorization Act, Section 337: Directs the Secretary of Defense to encourage commercial firms to enter into "partnerships" with depots.

1998 National Defense Authorization Act: Authorizes a two-year pilot program under which Army industrial facilities may sell articles and services to persons outside DOD without regard to their commercial availability in support of DOD weapon systems.

1998 National Defense Authorization Act, Section 141: Adds section 2474 to title 10, establishing Centers of Industrial and Technical Excellence at existing depots and permitting receipts from public-private "partnerships" to be credited to depots' accounts.

1998 National Defense Authorization Act, Section 361: Amends 10 U.S.C. 2471 to permit proceeds from leases of excess equipment and facilities to be used by the leasing military department.

Federal Acquisition Regulation, Subpart 45.3: Establishes the conditions and limitations for providing equipment and facilities to a contractor or subcontractor.

EXHIBIT 3

TYPES OF PARTNERING APPROACHES

Direct sale: An arrangement whereby military and commercial entities enter into a contractual relationship for the use of military depot maintenance facilities and employees to provide the private sector with articles and/or services.

Work share: An arrangement whereby a combination of military and commercial facilities and/or employees is used to execute a program manager's work package—including tasks such as weapon system manufacture, modification, or upgrade. Under the work share arrangement, the program manager issues a work order to the military participant and a contract to the private sector participant. The relationship between the participants to accomplish the work package is usually coordinated with a memorandum of understanding or memorandum of agreement instead of a contract.

Teaming: An arrangement whereby military and commercial entities enter into a contractual relationship to accomplish a deliverable stipulated in a contract. The relationship between the participants is usually initially outlined in a teaming agreement during the proposal's preparation and then formalized as a contractor/subcontractor relationship subsequent to the contract award.

Lease: An arrangement whereby military and commercial entities enter into a contractual relationship for the private-sector's use of public depot maintenance facilities and/or its equipment to perform work for either the public or private sector.

Government-furnished resources: An arrangement whereby military and commercial entities enter into an agreement for private-sector use of public depot maintenance facilities and/or its equipment and employees at no cost in connection with and under the terms of a contract.

(GAO-03-423)

EXHIBIT 4

CHARACTERISTICS OF SUCCESSFUL PARTNERSHIPS

Long-term relationship and commitment: A long-term relationship and commitment: 1) permits both contractors and depots to better plan future workload requirements and create a better business case for the contractor to make investments to improve depot repair capability; and 2) allows the contractor to help manage parts obsolescence.

Shared partnership vision and objectives: Having partners share the same partnership vision and objectives helps ensure that the partners will not be working at cross-purposes.

The right metrics and incentives: The right metrics and incentives are needed to effectively measure that progress is being made and ensure that the partners are effectively motivated to achieve partnership goals and objectives.

Early acquisition community involvement: Developing the partnership with acquisition community involvement during the early phases of a weapon system's acquisition helps to ensure that any need for additional depot maintenance capability development is fully planned and funded.

Complementary skills and abilities: Each partner should bring complementary skills and abilities to the partnership because if each partner's capabilities are the same, the relationship may result in a competitive and potentially adversarial relationship, not the cooperative, synergistic relationship hoped for in a partnership.

Senior-level advocacy and support: DOD and contractor senior management support for a partnership is necessary to ensure that the effort receives the focus and resources needed to achieve success.

Sound business case analysis: A comprehensive business case analysis, including expected outcomes, should be conducted as part of the decision process for entering a partnership to ensure a sound result benefiting both the depot and the private-sector partners.

Mutual trust and shared risk: The partnership should be firmly grounded in mutual trust, open communications, and balanced risk among partners.

Flexibility to change partnership scope: To ensure the ability to adapt to changing circumstances or factors, the partnerships should have the flexibility to change the partnership scope.

EXHIBIT 4

(Continued)

CHARACTERISTICS OF SUCCESSFUL PARTNERSHIPS

Balanced workload: Workload should be balanced among the partners to ensure meaningful involvement for each partner and ensure that one partner does not receive only low-skilled work or no work at all.

Independent review and oversight: Independent review and oversight provides an objective assessment of whether each partnership is achieving the expected benefits and whether each partner performs as expected. Such a review also provides a basis for correcting or redirecting partnership efforts if expectations are not being met.

Enforce partnership decisions and requirements: To ensure successful partnering efforts, the partners' senior management must provide a mechanism for enforcing compliance with partnership decisions and requirements.

Full coordination with all stakeholders: Public-private partnership efforts should include steps to get feedback from all stakeholders on planned efforts and adjust the partnering strategies to reflect legitimate concerns of these stakeholders.

Clearly documented objectives in partnering agreement: Once clear mutual partnering objectives are determined, they should be documented into a formal partnering agreement. The documentation can provide for dispute mediation and resolution, and also help delineate each partner's liability.

Exhibit 5

Honeywell/NADEP-CP Partnering Chronology

January 1998	Due to changes in Title 10 USC, Honeywell and NAVAIR 6.0 discuss partnering with a public depot.
April 1998	Honeywell visits NADEP-CP to discuss a partnering arrangement for APU repair.
June 1998	Roles and responsibilities defined, work begins on legal agreement between Honeywell and NADEP-CP.
August 1998	Honeywell and NADEP-CP sign teaming agreement stating each party agrees to cooperate and share data to support proposal development and price negotiations.
February 1999	Labor and repair costs finalized.
September 1999	Business Case Analysis issued showing a \$13.98 million cost savings over 10 years by awarding the DVD/TLS contract to Honeywell.
November 1999	Work begins on preparing the Honeywell NADEP-CP subcontract named “Commercial Service Agreement” (CSA).
June 2000	Total Logistics Support (TLS) contract awarded.
June 2000	CSA signed establishing the public-private partnership between NADEP-CP and Honeywell through a five-year base contract with five one-year renewal options.
July 2000	NADEP-CP inducts first APU under public-private partnership.
April 2001	NADEP Jacksonville and Honeywell discuss benefits of partnering to repair F/A-18 (F404) main fuel control (MFC).
July 2001	NADEP North Island and Honeywell discuss possibility of partnering to repair various Honeywell Avionics Products.
June 2005	Review of Honeywell NADEP-CP CSA for extension options.

Improving Readiness with a Public-Private Partnership:

NAVAIR's Auxiliary Power Unit Total Logistics Support Program

by

William Lucyshyn, Rene Rendon, and Stephanie Novello

Part II

THE PARTNERSHIP

Securing Support

Once having decided on the desired approach, Bautista and her team at Cherry Point began the task of securing support for and, overcoming opposition to, the public-private partnership. They knew that any partnership that transferred repair and inventory maintenance functions to an off-site contractor faced resistance on the grounds that the inventory would no longer be “visible” on the shelf. Moreover, there was fear that a partnership with private industry would cost jobs. Thus, Bautista and her team got to work reassuring depot employees and union representatives that embarking on a public-private partnership would not significantly affect the employment status quo. Moreover, they spent time briefing Congressional staff and members affected by the project in order to secure their support.

Bautista’s strategy paid off and in June 2000 the Navy signed a contract with Honeywell Inc. and subcontractor Caterpillar Logistics to manage its APU inventory,

with repair work to be handled by its depot at Cherry Point, North Carolina, on a subcontract to Honeywell.

The Contract

The Auxiliary Power Unit Total Logistics Support Program (APU TLS), as the public-private partnership is known, was the Navy's first public-private partnership. APU TLS provides support not only for F/A-18 APUs, but also for APUs used on the C-2, S-3, P-3, and C-130 aircraft.

NADEP-CP signed a ten year (five base years and five one-year renewal options) Firm Fixed Price by the flight hour, performance-based contract with Honeywell—with Caterpillar Logistics as a major subcontractor—in June 2000.

Table 2. APU TLS Program Team Responsibilities

Honeywell/Caterpillar Logistics Alliance	Honeywell	NADEP-CP
Inventory Management	Overall Program Execution	Repair and Overhaul
Warehousing	Customer Support	Engineering Support
Packaging, Handling,	Engineering Support	Technical Publications
Storage, and Transportation	Fleet Reps	Logistics Support
Total Asset Visibility	Reliability Engineering	Continuous Improvement
Customer Support	Quality Assurance	
Service Delivery	Repair and Overhaul	
Continuous Improvement	Configuration Management	
Electronic Data Interchange/Electronic Commerce (EDI/EC)	Original Equipment Manufacturer (OEM) Parts	
	Continuous Improvement	

Honeywell, as the prime contractor, procures and manages all consumable items used by NADEP-CP to repair the APUs and subcontracts the repair effort back to NADEP-CP on a cost-reimbursable basis. In essence, Honeywell, instead of the DLA,

has become the material manager for the consumable items. Honeywell also subcontracts with Caterpillar Logistics to provide data management, inventory management, parts delivery to the Naval Air Station Supply, and warehouse management. Program team responsibilities are further broken out in Table 2. Table 3 shows what exactly NADEP-CP is getting through the APU TLS partnership.

Table 3. What the Navy is Buying through APU TLS Program

	<u>Pre-APU TLS</u>	<u>APU TLS</u>
<u>Material:</u>	Depot Material	Material Management Obsolescence Management I, O, D Level Material Support Warehousing Guaranteed Availability
<u>Labor:</u>	Depot Labor	I Level Maintenance Reduction
<u>Transportation:</u>	Routine Delivery	Premium Delivery
<u>Engineering:</u>	Fleet Supportability Evaluations (FSEs) (Naval Air Technical Data and Engineering Service Command, NATEC)	FSEs (contractor funded) Component Improvement Engineering Guaranteed Reliability Improvements Customer Support Engineering Integrated Program Management Team Configuration Management Customer Satisfaction Board Maintenance of Technical Publications
<u>Administrative:</u>	Limited Data Availability	Internet Access to Data Total Asset Visibility Performance Tracking System Integrated Logistics Support Caterpillar Logistics Management Serial Number Tracking

The APU TLS partnership is built on a ten-year, firm fixed price, performance-based contract, with five base years plus the prospect of as many as five one-year future awards. The contract is priced by the flight hour, under which the contractor does not individually price each item, but develops prices based on total contract cost. Moreover, the contract cost does not increase with higher rates of Beyond Capability of Maintenance (BCM). This is opposed to traditional pricing, under which prices were developed based on most recent procurement and repair costs plus cost recovery rates. NAVICP funds the contract using the Navy Working Capital Fund, compensated by the Flying Hour Program (FHP). APU TLS adds stability to the FHP, in that the Navy now knows what they are spending on APUs. In addition, total savings and cost avoidances to FHP over the 10 year contract period are projected to be in excess of \$50 million.

Under the APU TLS program, availability and reliability increases are guaranteed. Specifically, the contract requires Honeywell to maintain 90 percent availability of reparable items and stipulates that incremental payment reductions are to be made if the annual availability is not achieved. Moreover, CONUS (continental United States) routine requisitions must be delivered within five business days, Issue Priority Group 01 (IPG 01) requisitions must be delivered within two business days, and all OCONUS (outside the continental United States) requisitions must be delivered within four days. Shipping to all CONUS sites and overseas/OCONUS locations occurs 24 hours a day, 365 days a year.

The contract guarantees reliability increases as well, as measured by increased MFHBUR (see Table 4) and provides for a flat payment downward adjustment if the annual reliability is not met. The APU TLS contract also provides an incentive to

encourage Honeywell to meet and exceed reliability requirements in the form of a gain share provision if reliability surpasses guarantees by more than 25 percent. In addition, the contract stipulates a surge capability of 120 percent of annual flight hours, and that repairables from any other service can be added, which lowers price per flight hour by spreading fixed costs over a larger business base.

Table 4. APU TLS Reliability Increase Guarantees	
Aircraft:	Reliability Increase:
F/A-18	45%
C-2	15%
S-3	25%
P-3	390%

RESULTS

While it is too early to definitively decide the success or failure of the partnership, early reviews have shown the initial results to be very encouraging. The available data shows that between July 2000 and October 2002 the following results were achieved:

- The number of APUs awaiting depot repair because of lack of parts went from 118 to zero.¹⁰
- Back orders were reduced from 125 to 26.¹¹
- Average delivery time went from 35 days to 5.4 days.
- 98 percent of requisitions were filled within contractual requirements.
- Supply material availability increased from 65 to 95 percent.

In addition, NAVAIR provided further signs of success in May 2004. For the five aircraft models (C-2, F/A-18, S-3, C-130, and P-3), back orders decreased to zero and the

supply material availability further increased to 97 percent.¹² NAVAIR also credited over 30 reliability improvements to the program, and over \$50 million in cost avoidance. In sum, this performance-based logistics contract has improved support to the fleet by increasing supply chain efficiency and APU availability at a fixed cost. This adds stability to the Navy’s Flying Hour Program—the Navy now knows what they are spending on APUs.

LESSONS LEARNED

In the course of implementing the Navy’s first public-private partnerships, NADEP-CP learned the following general lessons. First, using a performance-based logistics (PBL) concept aligns the contractor’s profit motive with the Navy’s performance objective—instead of buying parts, the Navy is now procuring a result. These contracts can and must be structured using straightforward, measurable, fleet approved metrics. Second, these programs must be based on a solid business case analysis. In addition, alternative approaches, such as public-private partnerships, can be structured to fit into the requirements of the existing legislation. Finally, putting together a successful program requires the upfront involvement of all the stakeholders, including depot managers, engineers, logisticians, the Defense Finance and Accounting Service (DFAS)—to ensure that the accounting system has a financial process to accommodate the “partnering” concept—and DLA. Moreover, the OEM provider should negotiate to buy consumables from DLA early in the effort.

Innovative approaches can provide improved operational performance at reduced costs, and be accomplished so that it is transparent to the fleet—resulting in improved operational capability and more satisfied customers.

PART II CASE QUESTIONS/EXERCISES

1. Summarize the costs and benefits (both financial and non-financial) of this public-private partnership.
2. Discuss the consequence of a long term sole source contract for performance based logistics support.
3. Discuss some approaches that can be used to maintain competitive pressure on the contractor involved with a long term contract.
4. Does this partnering approach have wider applicability in logistics support contracts? Provide rationale to support your conclusion.

End Notes

¹ Paul Stanfield, Silvanus Udoka, Sanjiv Sarin, Bala Ram, and Dan Mountjoy. LogTech Center of Excellence in Logistics and Technology, *Affordable Readiness at NADEP Cherry Point*.

² Government Accountability Office, *Depot Maintenance: Public-Private Partnerships Have Increased, but Long-Term Growth and Results Are Uncertain*, GAO-03-423, April 2003.

³ Ibid, p. 1.

⁴ NAVAIR web site, http://www.navair.navy.mil/index.cfm?fuseaction=visitor_info.cp.

⁵ Office of the Inspector General, Department of Defense, *Audit Report on the Commercial Contract for Total Logistics Support of Aircraft Auxiliary Power Units*, D-2000-180, August 31, 2000.

⁶ William S. Cohen, Department of Defense, *Defense Reform Initiative Reports*, November 1997.

⁷ Ibid, p. 34.

⁸ Office of the Inspector General, Department of Defense, *Audit Report on the Commercial Contract for Total Logistics Support of Aircraft Auxiliary Power Units*, D-2000-180, August 31, 2000.

⁹ Ibid.

¹⁰ Government Accountability Office, *Depot Maintenance: Public-Private Partnerships Have Increased, but Long-Term Growth and Results Are Uncertain*, GAO-03-423, April 2003, p.53.

¹¹ Ibid.

¹² M.G. Ahern, 2004 DoD Procurement Conference, Logistics Panel, *Department of the Navy Performance Based Logistics*, May 27, 2004.